

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

Comcast Cable Communications, LLC; Cox Communications, Inc.; Time Warner  
Cable Enterprises LLC; Verizon Services Corp. and ARRIS Group, Inc.

Petitioner

vs.

TQ Delta, LLC

---

PETITION FOR INTER PARTES REVIEW

OF

U.S. PATENT NO. 8,718,158

**TABLE OF CONTENTS**

PETITIONER’S EXHIBIT LIST ..... iv

I. Mandatory Notices..... 1

    A. Real Party-in-Interest..... 1

    B. Related Matters..... 2

    C. Lead and Back-up Counsel and Service Information ..... 3

II. Grounds for Standing..... 3

III. Relief Requested ..... 4

IV. Reasons for the Requested Relief..... 4

    A. Summary of Reasons ..... 4

    B. Summary of the ’158 Patent..... 6

    C. Prosecution History ..... 9

    D. Note Regarding Page Citations ..... 10

V. Identification of Challenges and Claim Construction ..... 10

    A. Challenged Claims..... 10

    B. Claim Construction..... 10

        1. “*multicarrier*” (claims 1-30): ..... 10

        2. “*transceiver*” (claims 1-28):..... 11

    C. Statutory Grounds for Challenges ..... 11

    D. Level of Ordinary Skill in the Art ..... 12

    E. Identification of How the Claims Are Unpatentable..... 13

        1. Challenge #1: Claims 1, 2, 4, 15, 16, and 18 are obvious under 35 U.S.C. § 103(a) over Shively in view of Stopler ..... 13

            a) Brief Summary of Shively ..... 13

            a) Brief Summary of Stopler..... 15

            b) Reasons to Combine ..... 16

            c) Detailed Claim Analysis ..... 18

        2. Challenge #2: 3, 5, 14, 17, 19, and 28-30 are obvious under 35 U.S.C. § 103(a) over Shively in view of Stopler, and further in view of Gerszberg ..... 34

(a)	Brief Summary of Gerszberg.....	35
a)	Reasons to Combine .....	35
b)	Detailed Claim Analysis .....	39
3.	Challenge #3: 6, 9, 10, 12, 20, 23, 24, and 26 are obvious under 35 U.S.C. § 103(a) over Shively in view of Stopler, and further in view of Bremer.....	42
a)	Brief Summary of Bremer .....	43
b)	Reasons to Combine .....	44
c)	Detailed Claim Analysis .....	46
4.	Challenge #4: Claims 8, 11, 13, 22, 25, and 27 are obvious under 35 U.S.C. § 103(a) over Shively in view of Stopler, further in view of Bremer, and further in view of Gerszberg.....	52
a)	Reasons to Combine .....	52
b)	Detailed Claim Analysis .....	53
5.	Challenge #5: Claims 7 and 21 are obvious under 35 U.S.C. § 103(a) over Shively in view of Stopler, further in view of Bremer, and further in view of Flammer .....	55
a)	Brief Summary of Flammer.....	55
b)	Reasons to Combine .....	56
c)	Detailed Claim Analysis .....	59
VI.	Conclusion .....	62

**PETITIONER’S EXHIBIT LIST**

Ex. 1001	U.S. Patent No. 8,718,158 to Tzannes (“the ’158 patent”)
Ex. 1002	Prosecution File History of U.S. Pat. No. 8,718,158
Ex. 1003	Prosecution File History of U.S. Pat. No. 8,090,008
Ex. 1004	Prosecution File History of U.S. Pat. No. 7,769,104
Ex. 1005	Prosecution File History of U.S. Pat. No. 7,471,721
Ex. 1006	Prosecution File History of U.S. Pat. No. 7,292,627
Ex. 1007	Prosecution File History of U.S. Pat. No. 6,961,369
Ex. 1008	U.S. Provisional Application No. 60/164,134
Ex. 1009	Declaration of Dr. Jose Tellado under 37 C.F.R. § 1.68
Ex. 1010	Curriculum Vitae of Dr. Jose Tellado
Ex. 1011	U.S. Patent No. 6,144,696 to Shively et al. (“Shively”)
Ex. 1012	U.S. Patent No. 6,625,219 to Stopler (“Stopler”)
Ex. 1013	U.S. Patent No. 6,424,646 to Gerszberg et al. (“Gerszberg”)
Ex. 1014	Harry Newton, NEWTON’S TELECOM DICTIONARY, 13 <sup>th</sup> Ed. (1998) (selected pages)
Ex. 1015	Kim Maxwell, “Asymmetric Digital Subscriber Line: Interim Technology for the Next Forty Years,” <i>IEEE Communications Magazine</i> (Oct. 1996).

Petition for *Inter Partes* Review of U.S. Patent No. 8,718,158

---

Ex. 1016	Walter Goralski, ADSL AND DSL TECHNOLOGIES (McGraw-Hill 1998) (selected pages)
Ex. 1017	U.S. Patent No. 4,924,516 to Bremer et al. (“Bremer”)
Ex. 1018	American National Standard for Telecommunications, Network and Customer Installation Interfaces—Asymmetric Digital Subscribers Line (ADSL) Metallic Interface (ANSI T1.413-1995)
Ex. 1019	U.S. Patent No. 5,515,369 to Flammer, III et al. (“Flammer”)
Ex. 1020	Declaration of David Bader

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.